AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please Cancel Claims 2, 13, 17, 20 and 21.

Please add Claims 22, 23, 24, 25 and 26.

LISTING OF THE CLAIMS:

1 (Currently amended). A self-locking bolt assembly comprising:

(a) a bolt including a threaded shank, an axial bore extending through the shank, the bore including a threaded bore section, a tapered end section, and a bore midsection between the threaded bore section and the tapered end section;

(b) a screw set pin including a screw section having threads for engaging the threaded bore section and a pin shaft having a tapered end section for engaging the tapered end section of the bore, the pin shaft having a proximal end attached to the screw section, the pin shaft being sufficiently long to ensure that when the tapered distal end section engages the tapered end section of the bore the screw set pin then can be screwed a predetermined distance

further into the bore without galling threads of the screw section and the threaded bore section[.], and

(c) said tapered end section of the pin shaft having a taper angle that is less than a taper angle of the tapered end section of the bore to allow a narrowed end portion of the tapered end section of the pin shaft to engage a narrowed end portion of the tapered end section of the bore.

2 (Canceled) .

3 (Currently amended). The self-locking bolt assembly of claim ~~2~~ 1 including a plurality of slits extending through a distal end section of the shank that includes the tapered end section of the bore.

4 (Original). The self-locking bolt assembly of claim 3 wherein the plurality of slits includes a pair of diametrically opposed slits.

5 (Original). The self-locking bolt assembly of claim 1 wherein a proximal end of the screw set pin includes a feature for applying torque to the screw set pin.

6 (Original). The self-locking bolt assembly of claim 5 wherein the torque-applying feature includes a key opening for receiving a torque-applying device.

7 (Original). The self-locking bolt assembly of claim 1 wherein the pin shaft has a diameter that is less than a diameter of the threaded bore section to allow the pin shaft to pass through the threaded bore section without engaging threads thereof.

8 (Original). The self-locking bolt assembly of claim 1 wherein the bolt includes a bolt head attached to the shank, and wherein the bore extends through the bolt head.

9 (Original). The self-locking bolt assembly of claim 1 including a body having a threaded bolt-receiving hole therein, with the screw set pin tightened sufficiently into the bolt to cause the tapered end section of the pin shaft to expand a distal end section of the shank enough that threads of the shank tightly engage threads of the bolt-receiving hole and become locked

into the body.

10 (Original). The self-locking bolt assembly of claim 3 including a body having a threaded bolt-receiving hole therein, with the screw set pin tightened sufficiently into the bolt to cause the tapered end section of the pin shaft to sufficiently expand fingers defined by the slits that central contact areas of the fingers elastically deform and dig into the bolt-receiving hole enough to securely lock the bolt to the body.

11 (Original). The self-locking bolt assembly of claim 10 wherein edge contact areas of the fingers deform and dig into the tapered end section of the pin shaft enough to securely lock the screw set pin to the bolt.

12 (Currently amended). A method of using a self-locking bolt assembly including a bolt including a threaded shank having an axial bore extending through the shank for receiving a screw set pin including a screw section having threads for engaging a threaded bore section of the bore, the screw set pin also including a tapered end section, the method comprising:

(a) providing a bore midsection between the threaded bore section and the

tapered end section; ~~and~~

(b) providing a pin shaft having one end attached to the screw section and a tapered end section for engaging the tapered end section of the bore, the pin shaft being sufficiently long to ensure that when the tapered distal end section of the pin shaft engages the tapered end section of the bore the screw set pin then can be tightened a predetermined distance further into the bore without galling threads of the screw section and the threaded bore section[.]; and

(c) screwing the screw set pin sufficiently far into the bolt enough to abut the tapered end section of the pin shaft against the tapered end section of the bore, and causing only a narrowed end portion of the tapered end section of the pin shaft to engage a narrowed end portion of the tapered end section of the bore by providing the tapered end section of the pin shaft with a taper angle that is less than a taper angle of the tapered end section of the bore.

13 (Canceled).

14 (Original). The method of claim 12 including providing a plurality of slits extending through a distal end section of the shank including the tapered end section of the bore.

15 (Original). The method of claim 12 wherein the diameter of the pin shaft has a diameter that is less than a diameter of the threaded bore section of the bore, the method including advancing the pin shaft through the threaded bore section without engaging threads thereof.

16 (Original). The method of claim 14 including locking the self-locking bolt assembly into a threaded bolt-receiving hole in a body by tightening the screw set pin sufficiently far into the bolt to cause the tapered end section of the pin shaft to sufficiently expand fingers defined by the slits that central contact areas of the fingers elastically deform and dig into the bolt-receiving hole enough to securely lock the bolt to the body.

17 (Canceled).

18 (Original). A method of increasing a mechanical advantage of a self-locking bolt assembly including a bolt including a threaded shank having an axial bore extending through the shank for receiving a screw set pin including a screw section having threads for engaging a threaded bore section of the bore, the screw set pin also including a tapered end section, the method comprising:

(a) providing a bore midsection between the threaded bore section and the

tapered end section;

(b) providing a plurality of slits in a distal end section of the shank;

(c) providing a pin shaft having one end attached to the screw section and a tapered end section for engaging the tapered end section of the bore, the pin shaft being sufficiently long to ensure that when the tapered end section of the pin shaft engages the tapered end section of the bore the screw set pin then can be screwed a predetermined distance further into the bore without galling threads of the screw section and the threaded bore section; and

(d) providing an increased distance between proximal ends of the slits and a contact area at which the tapered end section of the pin shaft engages the tapered end section of the bore by providing the tapered end section of the pin shaft with a taper angle that is less than a taper angle of the tapered end section of the bore.

19 (Currently amended). A self-locking bolt assembly comprising:

(a) a bolt including a threaded shank having an axial bore extending through the shank for receiving a screw set pin including a screw section having threads for engaging a threaded bore section of the bore, the screw set pin also including a tapered end section;

(b) a bore midsection between the threaded bore section and the tapered end section; ~~and~~

(c) means for engaging the tapered end section of the bore such that when the tapered distal end section engages the tapered end section of the bore the screw set pin then can be tightened a predetermined distance further into the bore without galling threads of the screw section and the threaded bore section[.],

(d) means for screwing the screw set pin sufficiently far into the bolt to abut the tapered end section of the pin shaft, without galling threads of the shank, and differential taper means for causing only a narrowed end portion of the tapered end section of the pin shaft to engage a narrowed end portion of the tapered end section of the bore; and

(e) differential radius means for locking the self-locking bolt assembly into a threaded bolt-receiving hole in a body by tightening the screw set pin sufficiently far into the bolt to cause the tapered end section of the pin shaft to sufficiently expand fingers defined by the slits that central contact areas of the fingers elastically deform and dig into the bolt-receiving hole enough to securely lock the bolt to the body and to cause edge contact areas of the fingers to deform and dig into the tapered end section of the pin shaft enough to securely lock the screw set pin to the bolt.

20 (Canceled)

21 (Canceled)

22 (New). A method of using a self-locking bolt assembly including a bolt including a threaded shank having an axial bore extending through the shank for receiving a screw set pin including a screw section having threads for engaging a threaded bore section of the bore, the screw set pin also including a tapered end section, the method comprising:

(a) providing a bore midsection between the threaded bore section and the tapered end section;

(b) providing a pin shaft having one end attached to the screw section and a tapered end section for engaging the tapered end section of the bore, the pin shaft being sufficiently long to ensure that when the tapered distal end section of the pin shaft engages the tapered end section of the bore the screw set pin then can be tightened a predetermined distance further into the bore without galling threads of the screw section and the threaded bore section;

(c) screwing the screw set pin sufficiently far into the bolt enough to abut the tapered end section of the pin shaft against the tapered end section of the bore, and causing only a narrowed end portion of the tapered end section of the pin shaft to engage a narrowed end portion of the tapered end section of the bore by providing the tapered end section of the pin

shaft with a taper angle that is less than a taper angle of the tapered end section of the bore;

(d) providing a plurality of slits extending through a distal end section of the shank including the tapered end section of the bore; and

(e) tightening the screw set pin sufficiently far into the bolt that edge contact areas of the fingers deform and dig into the tapered end section of the pin shaft enough to securely lock the screw set pin to the bolt.

23 (New). A self-locking bolt assembly, for locking the assembly in a threaded bolt-receiving hole, comprising:

(a) a bolt including a threaded shank, an axial bore extending through the shank, the bore including a threaded bore section, a tapered end section, and a bore midsection between the threaded bore section and the tapered end section;

(b) a screw set pin including a screw section having threads for engaging the threaded bore section and a pin shaft having a tapered end section for engaging the tapered end section of the bore, the pin shaft having a proximal end attached to the screw section, the pin

shaft being sufficiently long to ensure that when the tapered distal end section engages the tapered end section of the bore the screw set pin then can be screwed a predetermined distance further into the bore without galling threads of the screw section and the threaded bore section;

(c) said tapered end section of the pin shaft having a taper angle that is less than a taper angle of the tapered end section of the bore to allow a narrowed end portion of the tapered end section of the pin shaft to engage a narrowed end portion of the tapered end section of the bore;

(d) a plurality of slits extending through a distal end section of the shank that includes the tapered end section of the bore; and

(e) differential radius means for locking the self-locking bolt assembly into the threaded bolt-receiving hole in a body by tightening the screw set pin sufficiently far into the bolt to cause the tapered end section of the pin shaft to sufficiently expand fingers defined by the slits that central contact areas of the fingers elastically deform and dig into the bolt-receiving hole enough to securely lock the bolt to the body and to cause edge contact areas of the fingers to deform and dig into the tapered end section of the pin shaft enough to securely lock the screw set pin to the bolt.

24 (New). A method of using a self-locking bolt assembly, for locking the bolt in a threaded bolt-receiving hole, including a bolt including a threaded shank having an axial bore extending through the shank for receiving a screw set pin including a screw section having threads for engaging a threaded bore section of the bore, the screw set pin also including a tapered end section, the method comprising:

(a) providing a bore midsection between the threaded bore section and the tapered end section and a plurality of slits extending through a distal end section of the shank that includes the tapered end section of the bore;

(b) providing a pin shaft having one end attached to the screw section and a tapered end section for engaging the tapered end section of the bore, the pin shaft being sufficiently long to ensure that when the tapered distal end section of the pin shaft engages the tapered end section of the bore the screw set pin then can be tightened a predetermined distance further into the bore without galling threads of the screw section and the threaded bore section;

(c) screwing the screw set pin sufficiently far into the bolt enough to abut the tapered end section of the pin shaft against the tapered end section of the bore, and causing only a narrowed end portion of the tapered end section of the pin shaft to engage a narrowed end portion of the tapered end section of the bore by providing the tapered end section of the pin shaft with a taper angle that is less than a taper angle of the tapered end section of the bore; and

(d) providing differential radius means for locking the self-locking bolt assembly into a threaded bolt-receiving hole in a body by tightening the screw set pin sufficiently far into the bolt to cause the tapered end section of the pin shaft to sufficiently expand fingers defined by the slits that central contact areas of the fingers elastically deform and dig into the bolt-receiving hole enough to securely lock the bolt to the body and to cause edge contact areas of the fingers to deform and dig into the tapered end section of the pin shaft enough to securely lock the screw set pin to the bolt.

25 (New). The self-locking bolt assembly of claim 3 including differential radius means for locking the self-locking bolt assembly into a threaded bolt-receiving hole in a body by tightening the screw set pin sufficiently far into the bolt to cause the tapered end section of the pin shaft to sufficiently expand fingers defined by the slits that central contact areas of the fingers elastically deform and dig into the bolt-receiving hole enough to securely lock the bolt to the body and to cause edge contact areas of the fingers to deform and dig into the tapered end section of the pin shaft enough to securely lock the screw set pin to the bolt.

26 (New). A self-locking bolt assembly comprising:

(a) a bolt including a threaded shank, an axial bore extending through the shank, the bore including a threaded bore section, a tapered end section, and a bore midsection between the threaded bore section and the tapered end section;

(b) a screw set pin including a screw section having threads for engaging the threaded bore section and a pin shaft having a tapered end section for engaging the tapered end section of the bore, the pin shaft having a proximal end attached to the screw section, the pin shaft being sufficiently long to ensure that when the tapered distal end section engages the tapered end section of the bore the screw set pin then can be screwed a predetermined distance further into the bore without galling threads of the screw section and the threaded bore section;

(c) said tapered end section of the pin shaft having a taper angle that is less than a taper angle of the tapered end section of the bore to allow a narrowed end portion of the tapered end section of the pin shaft to engage a narrowed end portion of the tapered end section of the bore; and

(d) means for locking the set screw pin to the bolt when a tapered end section of the pin shaft engages the tapered end section of the bore.